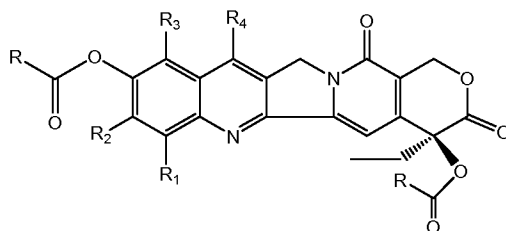


*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claims 1-54 (Canceled).

55. (Currently Amended) A di-ester derivative of camptothecin having the following general structure:



wherein

$R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$ , which can be the same or different, are hydrogen, halogen,  $C_1$ - $C_{20}$  alkyl,  $C_1$ - $C_8$  alkoxy,  $C_4$ - $C_{20}$  aryl or  $C_1$ - $C_{20}$  silyl,

each R can be the same or different and is  $[[C_1-C_{30}]]$   $C_2-C_{30}$  alkyl,  $C_2-C_{22}$  alkenyl,  $C_4-C_{30}$  aryl,  $(CH_2)_nOR_5$ ,  $(CH_2)_nSR_5$ ,  $(CH_2)_nNR_5R_6$  or  $(CH_2)_nCOR_7$ ,

wherein,

$R_5$  and  $R_6$ , which can be the same or different, are  $C_1$ - $C_8$  alkyl[[,]] or  $C_2$ - $C_6$  alkenyl [[or  $C_4$ - $C_{10}$  aryl]],

$R_7$  is hydroxy,  $C_1$ - $C_{20}$  alkyl,  $C_1$ - $C_6$  alkenyl,  $C_1$ - $C_6$  alkoxy,  $C_4$ - $C_{20}$  aryl, or  $NR_8R_9$ ,

wherein,

$R_8$  and  $R_9$ , which can be the same or different, are  $C_1$ - $C_6$  alkyl,

and n is an integer of 1 to 8,

or a pharmaceutically acceptable salt thereof.

56. (Currently Amended) A di-ester derivative of claim 55 or a salt thereof wherein each R can be the same or different and is  $[[C_1-C_{20}]]$   $C_2-C_{20}$  alkyl,  $C_2$ - $C_6$  alkenyl, or  $C_4$ - $C_{20}$  aryl.

57. (Previously Presented) A pharmaceutical composition comprising an effective amount of the camptothecin di-ester derivative of claim 55 or a salt thereof and a pharmaceutically acceptable carrier or diluent.

58. (Previously Presented) A pharmaceutical composition comprising an effective amount of the camptothecin di-ester derivative of claim 56 or a salt thereof and a pharmaceutically acceptable carrier or diluent.

59. (Currently Amended) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> is H, and R is  $[[C_3-C_{30}]]$  C<sub>2</sub>-C<sub>30</sub> alkyl.

60. (Currently Amended) The di-ester derivative of claim 56, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> is H, and R is  $[[C_1-C_{20}]]$  C<sub>2</sub>-C<sub>20</sub> alkyl.

61. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> is H, and R is C<sub>2</sub>-C<sub>22</sub> alkenyl.

62. (Previously Presented) The di-ester derivative of claim 56, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> is H, and R is C<sub>2</sub>-C<sub>6</sub> alkenyl.

63. (Currently Amended) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is (CH<sub>2</sub>)<sub>n</sub>OR<sub>5</sub>,

wherein,

R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>-C<sub>6</sub> alkenyl [[, or C<sub>4</sub>-C<sub>10</sub> aryl]], and  
n is 1 or 2.

64. (Currently Amended) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is (CH<sub>2</sub>)<sub>n</sub>SR<sub>5</sub>,

wherein,

R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>-C<sub>6</sub> alkenyl [[, or C<sub>4</sub>-C<sub>10</sub> aryl]], and  
n is 1 or 2.

65. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is  $[[ (CH_2)_n NR_5 R_6 ]]$  (CH<sub>2</sub>)<sub>n</sub>NR<sub>5</sub>R<sub>6</sub>,

wherein,

R<sub>5</sub> and R<sub>6</sub> are independently, C<sub>1</sub>–C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>–C<sub>6</sub> alkenyl [[, or C<sub>4</sub>–C<sub>10</sub> aryl]], and n is 1 or 2.

66. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is (CH<sub>2</sub>)<sub>n</sub>COR<sub>7</sub>,

wherein,

R<sub>7</sub> is hydroxy, C<sub>1</sub>–C<sub>6</sub> alkyl, C<sub>2</sub>–C<sub>6</sub> alkenyl, or C<sub>4</sub>–C<sub>10</sub> aryl, and  
n is 2 to 4.

67. (Currently Amended) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is [[C<sub>1</sub>–C<sub>30</sub>]] C<sub>2</sub>–C<sub>30</sub> alkyl.

68. (Currently Amended) The di-ester derivative of claim 56, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is [[C<sub>1</sub>–C<sub>20</sub>]] C<sub>2</sub>–C<sub>20</sub> alkyl.

69. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is C<sub>2</sub>–C<sub>22</sub> alkenyl.

70. (Previously Presented) The di-ester derivative of claim 56, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is C<sub>2</sub>–C<sub>6</sub> alkenyl.

71. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is C<sub>4</sub>–C<sub>30</sub> aryl.

72. (Previously Presented) The di-ester derivative of claim 56, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is C<sub>4</sub>–C<sub>20</sub> aryl.

73. (Currently Amended) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is (CH<sub>2</sub>)<sub>n</sub>OR<sub>5</sub>,

wherein,

R<sub>5</sub> is C<sub>1</sub>–C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>–C<sub>6</sub> alkenyl [[, or C<sub>4</sub>–C<sub>10</sub> aryl]], and  
n is 1 or 2.

74. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is CH<sub>2</sub>CH<sub>3</sub>, and R is (CH<sub>2</sub>)<sub>n</sub>SR<sub>5</sub>,

wherein,

R<sub>5</sub> is C<sub>1</sub>–C<sub>6</sub> alkyl, C<sub>2</sub>–C<sub>6</sub> alkenyl, or C<sub>4</sub>–C<sub>10</sub> aryl, and n is 1 or 2.

75. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{CH}_2\text{CH}_3$ , and R is  $(\text{CH}_2)_n\text{NR}_5\text{R}_6$ ,

wherein,

$R_5$  and  $R_6$  are independently,  $\text{C}_1\text{--C}_6$  alkyl[[,]] or  $\text{C}_2\text{--C}_6$  alkenyl [[, or  $\text{C}_4\text{--C}_{10}$  aryl]], and n is 1 or 2.

76. (Currently Amended) The di-ester derivative of claim 55, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{CH}_2\text{CH}_3$ , and R is  $[(\text{CH}_2)_n\text{COR}_7]$   $(\text{CH}_2)_n\text{COR}_7$ ,

wherein,

$R_7$  is hydroxy,  $\text{C}_1\text{--C}_6$  alkyl,  $\text{C}_2\text{--C}_6$  alkenyl, or  $\text{C}_4\text{--C}_{10}$  aryl, and

n is 2 to 4.

77. (Currently Amended) The di-ester derivative of claim 55, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $[[\text{C}_1\text{--C}_{30}]]$   $\text{C}_2\text{--C}_{30}$  alkyl.

78. (Currently Amended) The di-ester derivative of claim 56, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $[[\text{C}_1\text{--C}_{20}]]$   $\text{C}_2\text{--C}_{20}$  alkyl.

79. (Previously Presented) The di-ester derivative of claim 55, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $\text{C}_2\text{--C}_{22}$  alkenyl.

80. (Previously Presented) The di-ester derivative of claim 56, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $\text{C}_2\text{--C}_6$  alkenyl.

81. (Currently Amended)  $[[\text{The}]]$  The di-ester derivative of claim 55, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $\text{C}_4\text{--C}_{30}$  aryl.

82. (Currently Amended) The di-ester derivative of claim 56, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $[[\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3]]$   $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $\text{C}_4\text{--C}_{20}$  aryl.

83. (Currently Amended) The di-ester derivative of claim 55, wherein each of  $R_1$ ,  $R_2$  and  $R_3$  is H,  $R_4$  is  $\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$ , and R is  $(\text{CH}_2)_n\text{OR}_5$ ;

wherein,

R<sub>5</sub> is C<sub>1</sub>–C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>–C<sub>6</sub> alkenyl [[, or C<sub>4</sub>–C<sub>10</sub> aryl]], and  
n is 1 or 2.

84. (Previously Presented) The di-ester derivative of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is Si(CH<sub>3</sub>)<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>, and R is (CH<sub>2</sub>)<sub>n</sub>SR<sub>5</sub>,

wherein,

R<sub>5</sub> is C<sub>1</sub>–C<sub>6</sub> alkyl, C<sub>2</sub>–C<sub>6</sub> alkenyl, or C<sub>4</sub>–C<sub>10</sub> aryl, and  
n is 1 or 2.

85. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is Si(CH<sub>3</sub>)<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>, and R is (CH<sub>2</sub>)<sub>n</sub>NR<sub>5</sub>R<sub>6</sub>,

wherein,

R<sub>5</sub> and R<sub>6</sub> are independently, C<sub>1</sub>–C<sub>6</sub> alkyl[[,]] or C<sub>2</sub>–C<sub>6</sub> alkenyl [[, or C<sub>4</sub>–C<sub>10</sub> aryl]], and n is 1 or 2.

86. (Previously Presented) The di-ester of claim 55, wherein each of R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> is H, R<sub>4</sub> is Si(CH<sub>3</sub>)<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>, and R is (CH<sub>2</sub>)<sub>n</sub>COR<sub>7</sub>,

wherein,

R<sub>7</sub> is hydroxy, C<sub>1</sub>–C<sub>6</sub> alkyl, C<sub>2</sub>–C<sub>6</sub> alkenyl, or C<sub>4</sub>–C<sub>10</sub> aryl, and  
n is 2 to 4.

87. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein R<sub>1</sub> is CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, each of R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is [[C<sub>1</sub>–C<sub>30</sub>]] C<sub>2</sub>–C<sub>30</sub> alkyl.

88. (Currently Amended) The di-ester derivative of claim 56 or a salt thereof, wherein R<sub>1</sub> is CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, each of R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is [[C<sub>1</sub>–C<sub>20</sub>]] C<sub>2</sub>–C<sub>20</sub> alkyl.

89. (Previously Presented) The di-ester derivative of claim 55 or a salt thereof, wherein R<sub>1</sub> is CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, each of R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is C<sub>2</sub>–C<sub>22</sub> alkenyl.

90. (Previously Presented) The di-ester derivative of claim 56 or a salt thereof, wherein R<sub>1</sub> is CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, each of R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is C<sub>2</sub>–C<sub>6</sub> alkenyl.

91. (Previously Presented) The di-ester derivative of claim 55 or a salt thereof, wherein R<sub>1</sub> is CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, each of R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> is H, and R is C<sub>4</sub>–C<sub>30</sub> aryl.

92. (Previously Presented) The di-ester derivative of claim 56 or a salt thereof, wherein  $R_1$  is  $\text{CH}_2\text{N}(\text{CH}_3)_2$ , each of  $R_2$ ,  $R_3$  and  $R_4$  is H, and R is  $\text{C}_4\text{-C}_{20}$  aryl.

93. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein  $R_1$  is  $\text{CH}_2\text{N}(\text{CH}_3)_2$ , each of  $R_2$ ,  $R_3$  and  $R_4$  is H, and R is  $(\text{CH}_2)_n\text{OR}_5$ ,

wherein,

$R_5$  is  $\text{C}_1\text{-C}_6$  alkyl[[,]] or  $\text{C}_2\text{-C}_6$  alkenyl [[, or  $\text{C}_4\text{-C}_{10}$  aryl]], and  
n is 1 or 2.

94. (Previously Presented) The di-ester derivative of claim 55 or a salt thereof, wherein  $R_1$  is  $\text{CH}_2\text{N}(\text{CH}_3)_2$ , each of  $R_2$ ,  $R_3$  and  $R_4$  is H, and R is  $(\text{CH}_2)_n\text{SR}_5$ ,

wherein,

$R_5$  is  $\text{C}_1\text{-C}_6$  alkyl,  $\text{C}_2\text{-C}_6$  alkenyl, or  $\text{C}_4\text{-C}_{10}$  aryl, and  
n is 1 or 2.

95. (Currently Amended) The di-ester derivative of claim 55 or a salt thereof, wherein  $R_1$  is  $\text{CH}_2\text{N}(\text{CH}_3)_2$ , each of  $R_2$ ,  $R_3$  and  $R_4$  is H, and R is  $(\text{CH}_2)_n\text{NR}_5\text{R}_6$ ,

wherein,

$R_5$  and  $R_6$  are independently,  $\text{C}_1\text{-C}_6$   $\text{C}_1\text{-C}_6$  alkyl[[,]] or  $\text{C}_2\text{-C}_6$  alkenyl [[, or  $\text{C}_4\text{-C}_{10}$  aryl]], and n is 1 or 2.

96. (Previously Presented) The di-ester derivative of claim 55 or a salt thereof, wherein  $R_1$  is  $\text{CH}_2\text{N}(\text{CH}_3)_2$ , each of  $R_2$ ,  $R_3$  and  $R_4$  is H, and R is  $(\text{CH}_2)_n\text{COR}_7$ ,

wherein,

$R_7$  is hydroxy,  $\text{C}_1\text{-C}_6$  alkyl,  $\text{C}_2\text{-C}_6$  alkenyl, or  $\text{C}_4\text{-C}_{10}$  aryl, and  
n is 2 to 4.

97. (Currently Amended) A method of inhibiting [[to inhibit]] the enzyme topoisomerase I in an animal in need thereof comprising administering to the animal an effective amount of a composition comprising at least one di-ester derivative of claim 55.

98. (Currently Amended) A method of inhibiting [[to inhibit]] the enzyme topoisomerase I in an animal in need thereof comprising administering to the animal an effective amount of a composition comprising at least one di-ester derivative of claim 56.

99. (Currently Amended) A method of treating [[to treat]] cancer in a patient comprising administering a composition comprising at least one di-ester derivative of claim 55 to said patient in an effective amount to treat said cancer.

100. (Currently Amended) A method of treating [[to treat]] cancer in a patient comprising administering a composition comprising at least one di-ester derivative of claim 56 to said patient in an effective amount to treat said cancer.

101. (Previously Presented) The method of claim 99, wherein said cancer is lung, breast, colon, prostate, melanoma, pancreas, stomach, liver, brain, kidney, uterus, cervix, ovaries, urinary tract, gastrointestinal, or leukemia.

102. (Previously Presented) The method of claim 100, wherein said cancer is lung, breast, colon, prostate, melanoma, pancreas, stomach, liver, brain, kidney, uterus, cervix, ovaries, urinary tract, gastrointestinal, or leukemia.

103. (Previously Presented) The method of claim 99, wherein said cancer is solid tumor or blood borne tumor.

104. (Previously Presented) The method of claim 100, wherein said cancer is solid tumor or blood borne tumor.

105. (Previously Presented) The method of claim 99, wherein said composition is administered orally, parenterally, intramuscularly, transdermally or by an airborne delivery system.

106. (Previously Presented) The method of claim 100, wherein said composition is administered orally, parenterally, intramuscularly, transdermally or by an airborne delivery system.

107. (Previously Presented) The method of claim 99, wherein said composition is a nanoparticle containing said at least one di-ester of camptothecin.

108. (Previously Presented) The method of claim 100, wherein said composition is a nanoparticle containing said at least one di-ester of camptothecin.